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US EPA RECORDS CENTER REGION 5



506993

MINNESOTA POLLUTION CONTROL AGENCY

Agenda Item Control Sheet

AGENDA # _____

MEETING DATE: February 24, 1981APPEARANCE REQUESTED - Yes: _____ No: X

SCHEDULED TIME: _____

PREPARED BY: Richard R. FergusonDATE PREPARED: February 12, 1981

DATE MAILED: _____

SUBJECT: Request for Authorization to Enter Into a Contract with U.S. Geological;
Survey to Continue Studies on Ground Water Pollution, St. Louis Park

LOCATION: St. Louis Park
 City

Hennepin
 County

TYPE OF ACTION:

Permit _____	Request for hearing _____	New _____
Stipulation _____	Request for legal action _____	Modification _____
Contract <u>X</u>	Variance request (feedlot) _____	Extension _____
Policy _____	Rulemaking _____	Revocation _____
Information _____	Administrative order _____	Other _____

RECOMMENDED ACTION:

Issuance _____ Approval X No action needed _____
 Denial _____ Authorization _____

ISSUE STATEMENT:

The operation of a coal-tar and wood-preserving plant in St. Louis Park has caused a ground water contamination problem which has resulted in the closure of five municipal wells. The U.S. Geological Survey has recently completed a two-year project to develop a detailed understanding of the transport of coal-tar derivative through the ground water system in the St. Louis Park area. Because of the complexity of the problem, continuation of the project is needed for further development and calibration of the ground water transport model in order to evaluate the possible effects of remedial actions proposed by the MPCA and MDH. A proposal has been developed for the cost of the project to be shared by the MDH, city of St. Louis Park, MPCA, and USGS. The cost of the Agency's share is \$9,500.

ATTACHMENTS:

1. 3 page memorandum
2. USGS FY 81 Cooperative Agreement
3. _____
4. _____
5. _____

pumping test W-100

another pumping test scheduled for south of site

\$4500

008650

MINNESOTA POLLUTION CONTROL AGENCY
Division of Solid Waste
Hazardous Waste Site Response Group

Request for Authorization to Enter Into a Contract With U.S. Geological Survey to Continue Studies on Ground Water Pollution, St. Louis Park

February 24, 1981

Issue Statement

The operation of a coal-tar and wood-preserving plant in St. Louis Park has caused a ground water contamination problem which has resulted in the closure of five municipal wells. The U.S. Geological Survey has recently completed a two-year project to develop a detailed understanding of the transport of coal-tar derivatives through the ground water system in the St. Louis Park area. Because of the complexity of the problem, continuation of the project is needed for further development and calibration of the ground water transport model in order to evaluate the possible effects of remedial actions proposed by the MPCA and MDH. A proposal has been developed for the cost of the project to be shared by the MDH, city of St. Louis Park, MPCA, and USGS. The cost of the Agency's share is \$9,500.

I. Background:

Operation of a coal-tar distillation and wood-preserving plant during 1918-72 in St. Louis Park, a suburb of Minneapolis, Minnesota, resulted in serious contamination of ground water. The severity of the pollution, and the efforts of local, state, and federal agencies to define and resolve the technical management, and legal issues involved, have made this problem highly visible. The Minnesota Pollution Control Agency (MPCA) and Region V of the U.S. Environmental Protection Agency (EPA) agree that the contamination in St. Louis Park is the most significant single example of ground water pollution identified to date within their jurisdiction.

II. Discussion:

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In July, 1978, the U.S. Geological Survey (USGS) began a two-year project to develop a detailed understanding of the transport of coal-tar derivatives through the ground water system in the St. Louis Park area. The investigation has identified useful information on the spread of contaminants through multi-aquifer wells. The project has also provided for the interpretation of water quality and hydrologic data which have been presented in a preliminary analytical and computer model of transport in the Prairie du Chien - Jordan aquifer.

The first two year study has provided valuable insight to the ground water contamination problem. Because of the complexity of the problem, continuation of the investigation is needed for the further development and calibration of the ground water transport model. Further development is necessary for the application of the model in the evaluation of environmental effects of remedial actions proposed by the MPCA and Minnesota Department of Health (MDH).

The specific objectives of the proposed study are to:

1. Complete development and refinement of the computer simulation model of the Prairie du Chien - Jordan aquifer so that it can be used to evaluate various methods for the removal of contaminants from soil and ground water.
2. Continue collection of pumpage, water-level, and chemical data needed for computer-model simulation of contaminant transport in the Prairie du Chien - Jordan aquifer.
3. Conduct two pumping tests in the drift and Platteville aquifer to define their hydrologic character.
4. Continue geophysical logging and evaluation of multiaquifer wells as these are located in the field.
5. Provide consultation to the cooperators with regard to the hydrologic effects of measures proposed by the cooperators to remove or mitigate contamination of the ground water system in the vicinity of the city of St. Louis Park by coal-tar compounds.
6. Prepare a report by June 30, 1981, summarizing the results of the first nine months of the study. A second report will be completed during the second year of the study and will describe the results of the entire two-year study.

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A proposal has been developed for costs of this project to be shared by the city of St. Louis Park, MDH, MPCA, and USGS. The cash expenditures by each of these groups would be: St. Louis Park - \$5,000; MDH - \$9,500; and MPCA - \$9,500. In addition St. Louis Park, MDH, and USGS are providing services.

III. Conclusion:

Staff recommends that the Agency Board authorize \$9,500 for the Agency share of the continuation of the USGS project, for the purpose of obtaining a detailed understanding of the transport of coal-tar derivatives through ground water in the St. Louis Park area.

Suggested Staff Resolution

BE IT RESOLVED that the Agency Board authorize the expenditure of \$9,500, as the Agency share for the continuation of the U.S. Geological Survey project, for the purpose of obtaining a detailed understanding of the transport of coal-tar derivatives through ground water in the St. Louis Park area.

BE IT FURTHER RESOLVED, that the Executive Director is hereby authorized to execute the contract on behalf of the Agency.

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Form 9-1366
(Dec. 1971)

Department of the Interior
Geological Survey
JOINT FUNDING AGREEMENT
FOR

THIS AGREEMENT is entered into as of the 1 st day of October 19 80 by the GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the State of Minnesota Department of Health party of the second part

1. The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation The study "Transport of Coal-Tar Derivatives in the Prairie du Chien-Jordan Aquifer, St. Louis Park, Minnesota. The services provided by the party of the first part under the agreement shall be listed in Exhibit A, attached hereto and incorporated fully herein, hereinafter called the program
2. The following amounts shall be contributed to cover all of the cost of the necessary field and office work directly related to this program, but excluding any general administrative or accounting work in the office of either party and excluding the cost of publication by either party of the results of the program.
 - (a) \$ 70,000 by the party of the first part during the period Oct 1, 1980 to June 30, 1981
 - (b) \$ 70,000 by the party of the second part during the period Oct 1, 1980 to June 30, 1981

Payment shall be made pursuant to the terms of Exhibit B, attached hereto and fully incorporated herein.

- (c) Additional amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties

3. Expenses incurred in the performance of this program may be paid by either party in conformity with the laws and regulations respectively governing each party, provided that so far as may be mutually agreeable all expenses shall be paid in the first instance by the party of the first part with appropriate reimbursement thereafter by the party of the second part Each party shall furnish to the other party such statements or reports of expenditures as may be needed to satisfy fiscal requirements
4. The field and office work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement
6. During the progress of the work all operations of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party
7. The original records resulting from this program shall be deposited ultimately in the office of the party of the first part and shall become part of the records of that office Copies shall be furnished to the party of the second part upon request
8. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties.

GEOLOGICAL SURVEY
UNITED STATES
DEPARTMENT OF THE INTERIOR

By _____
Commissioner, Dept. of Health

By _____
Director, MPCA 008654

By _____
City, St. Louis Park

By _____ District Chief
(SIGNATURE & TITLE)

EXHIBIT A.

The following services will be performed by the Party of the First Part during the first nine months of a two-year study of the transport of coal-tar derivatives in the Prairie du Chien-Jordan aquifer, St. Louis Park, Minn:

1. By June 30, 1981, complete development and refinement of the computer-simulation model of the Prairie du Chien-Jordan aquifer so that it can be used by the Party of the Second Part to evaluate various methods for the removal of contaminants from soil and ground water.
 - a. Expand and refine the present two-dimensional transport model to better reflect actual conditions and use the model to test parameter sensitivities.
 - b. Using SWIP, incorporate separate layers for Prairie du Chien and Jordan, and realistic boundary conditions. Attempt headmatching under both steady-state and transient conditions.

If necessary to reduce computer costs, construct and use three-dimensional flow model to evaluate flow problem. Transfer refinements to SWIP and retest.
 - c. Using SWIP, add simplified history of contaminant introduction to evaluate transport rates and directions, parameter sensitivities, and uncertainties that may be caused by unlocated multiaquifer wells.
 - d. Using SWIP and measured distribution of contaminants, evaluate effect of manipulating pumpage, including municipal wells, industrial wells, and hypothetical gradient-control wells.
 - e. Using SWIP, and as time and time-series data permit, attempt calibration of transient transport of selected contaminants.
2. Continue collection of pumpage, water-level, and chemical data needed for computer-model simulation of contaminant transport in the Prairie du Chien-Jordan aquifer. Collection and chemical analysis of water samples by the Party of the First Part will be coordinated with ongoing sampling efforts by the Minnesota Department of Health, when possible.

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3. Conduct pumping tests at two sites, in both the drift and the Platteville aquifers at each site. The duration of such tests shall be determined by consideration of the data requirements of the analytical methods utilized, and after consultation with the Party of the Second Part. The Party of the Second Part will advise the Party of the First Part as to proper disposal of water pumped during these tests. Such pumping tests shall be completed by June 30, 1981.
4. Continue geophysical logging and evaluation of multiaquifer wells as these are located in the field.
5. Provide consultation to the cooperators with regard to the hydrologic effects of measures proposed by the cooperators to remove or mitigate contamination of the ground-water system in the vicinity of the City of St. Louis Park by coal-tar compounds.
6. Prepare a report and submit it to the Party of the Second Part by June 30, 1981. The report will summarize the results of the first nine months of the study including descriptions of data collection, development of the three-dimensional transport model, model sensitivity analysis and calibration attempts, and the application of the model to evaluating the hydrologic effects of aquifer-management strategies proposed by the cooperators. A second report will be completed during the second year of the study and will describe the results of the entire two-year study. This second report, which will be published by the U.S. Geological Survey, will be submitted to the Party of the Second Part for review on or about April 1, 1982, and in final form upon approval for publication by the Director of the U.S. Geological Survey.

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EXHIBIT B.

Terms of Payment:

Payment shall be made by the Party of the Second Part promptly after the Party of the First Part has completed the services provided for in this agreement and the acceptance of such services by the Party of the Second Part's authorized agent. An invoice shall be submitted in the form prescribed by the Party of the Second Part on or before June 30, 1981, in the amount of \$70,000;

Repay (actual payment)	\$24,000	\$24,000
Minnesota Department of Health	\$ 9,500	
Minnesota Pollution Control Agency	9,500	
City of St. Louis Park	5,000	
Direct Services Credit:		
MDH: field work, downhole television surveys, chemical analyses, well abandonment		\$36,000
City: field work (monitor pumpage, water levels, and water quality) and landscaping at monitor wells		\$10,000
		<hr/>
		\$70,000

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PROPOSED CONTRACT WITH U.S. GEOLOGICAL SURVEY:

Changes in Draft Mailed on February 13, 1981

1. On Attachment 2, lines 2-3 should be changed from "State of Minnesota Department of Health" to "State of Minnesota by its Department of Health and Pollution Control Agency";

2. On Attachment 2, paragraph 8 should be replaced by the

"8. Due to litigation, it is mandatory that all information gathered in this study be kept strictly confidential and discussed only among those directly involved in the work. In no event shall the party of the first part divulge or discuss PAH levels with anyone other than the cooperators directly involved in this study."

00-658